"Summary of article by W. Michael Hanemann: Valuing the Environment Through Contingent Valuation" in Frontier Issues in Economic Thought, Volume 3: Human Well-Being and Economic Goals. Island Press: Washington DC, 1997. pp. 144-147

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> The ability to place a monetary value on the consequences of pollution discharges is a cornerstone of the economic approach to the environment. If this cannot be done, it undercuts the use of economic principles... [19]

In many important cases, contingent valuation is the only way to measure how the public values something of importance to public policy. This paper describes current survey research methods, addresses some common objections to survey techniques, and considers the compatibility between contingent valuation and economic theory.

CONDUCTING RELIABLE SURVEYS

As in all research, the details are crucial to the success of contingent valuation surveys. Stopping people in a shopping mall and simply asking them what they would pay to preserve a remote wilderness area is unlikely to produce useful results. Vague, open-ended questions such as "What would you pay for environmental safety?" or "What is the most you would pay for ...?" are likely to get vague, meaningless answers.

Since the mid-1980s, most major contingent valuation studies have used closed-ended questions like, "If it cost $x, would you be willing to pay for (or, would you vote for) this?" Different people in the sample are confronted with different dollar amounts, allowing calculation of the proportion who are willing to pay each amount. A graph can then be constructed of the cumulative willingness-to-pay. The closed-end format makes it easier for most people to answer, and eliminates the problem of strategic bias (i.e., unrealistically high or low bids designed to influence the survey outcome in a desired direction).

The reliability of a questionnaire can be improved in many ways, including: providing adequate and accurate information; making the survey balanced and impartial; reminding respondents of the availability of substitutes and budget constraints; allowing for "don't know" responses; letting respondents reconsider answers at the end of the interview; and eliminating any perception of interviewer pressure. To check for the respondent's understanding and acceptance of key parts of the contingent valuation scenario, a "debriefing" session is added at the end of the questionnaire. Additionally, the interviewer may be asked about the circumstances of the interview and his/her perception of the respondents.

Other aspects of statistical and survey methods are also significant. For example, while the mean willingness to pay is extremely sensitive to the responses of the higher bidders, the median response is usually very robust. Research on issues of contingent valuation technique has led to many improvements in recent years. "While none of these alone is decisive, taken together they are likely to produce a reliable measure of value." [25]

OBJECTIONS TO SURVEYS

There are four common objections to surveys. First, surveys are vulnerable to response effects, i.e., small changes in question wording or order may cause significant variations in the answers. Response effects may be classified into several categories: order effects, i.e., bias towards the first item in a list; shift in meaning, where similar words mean different things; or framing effects, where the response varies to situations that the researcher views as equivalent. Other biases may arises from the difficulty of the task facing the respondent; for example, recall of past events or behavior is often inaccurate. Surveys are inevitably sensitive to context and bounded by constraints of human cognition; these limitations affect not only contingent valuation, but also virtually all government data on incomes, expenditures, and employment patterns. However, this is not enough to invalidate their use.

The second objection states that the contingent valuation process creates the value that it is measuring. That is, since there is no real value for the item being studied, respondents just make one up during the interview. However, if an individual responds thoughtfully to a question about voting to raise taxes to pay for a public good, why is this not a valid preference? "The real issue is not whether preferences are a construct but whether they are a stable construct." [28] Evidence from test-retest studies shows a high degree of consistency in valuations.

Third, ordinary people are ill-trained for valuing the environment. Yet the goal of a contingent valuation survey is to elicit people's preferences as if they were voting in a referendum. Therefore, prior experience or training are irrelevant since these are not criteria for voting. Who has standing and whose values count cannot be judged by economists.

The final objection is that survey responses cannot be verified. However, there are three ways to validate contingent valuation results: replication, comparison with estimates from other sources, and comparison with actual behavior when possible. Replication can be used even on a small scale to check if results hold and if the survey is communicating as intended. When measuring direct use values, a comparison can be made with estimates obtained through indirect methods, such as hedonic pricing and the travel-cost method. Many studies indicate that contingent valuation estimates are slightly lower than revealed preference estimates and highly correlated with them.

Furthermore, direct testing of contingent valuation predictions against actual behavior is possible. A number of tests have been carried out in which surveys paired real sale offers (e.g., opportunities to buy boxes of strawberries, or hunting licenses) with hypothetical questions about what price would be acceptable. Demand curves derived by the two methods have been strikingly similar.

CONTINGENT VALUATION AND ECONOMIC THEORY

Critics of contingent valuation sometimes reject it as a method of economic valuation because its results are inconsistent with their views of economic theory. One claim is that only outcomes should matter to people (and should appear as arguments in utility functions), regardless of the processes that generate them. Thus only use values, not existence values, would be legitimate; the "warm glow" of altruism could be seen as obscuring "true economic preferences." From this perspectives, contingent valuation is an unacceptable approach because it incorporates existence values. However, this conflicts with the standard economic view that what people value should be left up to them.

A more substantive objection concerns the way that willingness-to-pay estimates depend on other economic variables. Some critics have suggested that the income elasticities measured in contingent valuation surveys are often implausibly low. In fact, measured income elasticities in most surveys are within the range of elasticities typically estimated for state and local government services, or for charitable giving.

The term "embedding effect" has come to be used for several issues. One is the misconception that contingent valuation estimates do not vary with the scale or scope of the resource being valued. Actually, almost all studies do exhibit the expected types of variation; bigger and better resources are given higher values. The two widely cited exceptions suffered from numerous methodological problems. One asked three groups of respondents to value the prevention of deaths of 2000, or 20,000, or 200,000 out of a population of 85 million birds, describing the numbers at risk as much less than 1 percent, less than 1 percent, and about 2 percent, respectively, of the total population. Thus respondents had plausible grounds for perceiving these as similar, small numbers.

Other objections included in the discussion of embedding effects include sequencing, i.e., values depend on the sequence in which questions are asked, and sub-additivity, meaning that willingness to pay for a group of public goods is less than the sum of the individual valuations. Both of these effects are consistent with the conventional notion that many goods are substitutes for each other; an individual's market demand for goods also depends on what else he/she has bought.

A final theoretical argument against contingent valuation is that it rejects revealed preferences. However, revealed preferences are hard to apply to public goods. Also, they are hardly foolproof, being based on an extrapolation from particular choices to general conclusions about preferences. Nor is there any reason why observing people's behavior and asking them about behavioral intentions and motives should be mutually exclusive. When we want to know how the public values a resource, "a well-designed contingent valuation survey is one way of consulting the relevant experts -- the public itself." [38]